The following Listing of Claims replaces all prior versions and listings of claims in the application.

CLAIM AMENDMENTS

1. (Currently Amended) A method for ~~sensing a moving member~~ implementing a ring-type magnetoresistive sensor, the method comprising the steps of:

generating a variable magnetic field by ~~the moving member~~ a ring magnet; and

introducing a first bridge and a second bridge, each adjacent to the ~~moving member~~ ring magnet, the first bridge and second bridge each comprising a first set of runners and a second set of runners, wherein the first set of runners is approximately perpendicular to the second set of runners, the first set of runners and the second set of runners being electrically influenced by the magnetic field and each bridge generating at least a direct facing relationship signal and a direct transitional relationship signal as the ~~member~~ ring magnet moves; the second bridge being located a distance from the first bridge such that a phase difference exists between the signals of the two bridges;

wherein the ~~first set of runners is approximately perpendicular to the second set of runners within each bridge~~ first and second bridges are oriented with respect to the ring magnet such that the first set of runners is substantially in parallel to a radial line from the center of the ring magnet and the second set of runners is substantially perpendicular to the radial line from the center of the ring magnet.

2. (Currently Amended) The method of claim 1, the ~~moving member~~ ring magnet further comprising at least a first magnetic orientation and at least a second magnetic orientation.

3. (Currently Amended) The method of claim ~~2~~ 1, wherein the first bridge and the second bridge are substantially aligned in the moving direction of the ~~moving member~~ ring magnet.

4. (Previously Presented) The method of claim 1, the first set of runners further comprising a first set of resistive elements, the second set of runners further comprising a second set of resistive elements.

5. (Currently Amended) The method of claim ~~2~~ 1, the first set of runners and the second set of runners further generating at least an indirect transitional relationship signal.

6. (Original) The method of claim 1, further comprising the step of introducing a computing means in communication with at least one of the first bridge and second bridge.

7. (Currently Amended) The method of claim 6, the computing means determining the speed of the ~~moving member~~ ring magnet.

8. (Currently Amended) The method of claim ~~1~~ 6, the ~~moving member~~ ring magnet moving rotationally.

9. (Currently Amended) The method of claim ~~8~~ 1, the ~~moving member~~ ring magnet moving linearly.

10. (Currently Amended) The method of claim 8, the computing means determining the rotational direction of the ~~moving member~~ ring magnet based upon the first bridge signal's relationship to the second bridge signal.

11. (Currently Amended) The method of claim ~~10~~ 1, the first bridge being a Wheatstone bridge, the second bridge being a Wheatstone bridge.

12. (Cancelled)

13. (Currently Amended) A method of forming a magnetic speed and direction detection device, the method comprising the steps of:

introducing a first set of runners and a second set of runners wherein the first set of runners is approximately perpendicular to the second set of runners, configuring the first set of runners with the second set of runners as a first Wheatstone bridge, the first Wheatstone bridge configured to generate at least a first output signal in the presence of a variable magnetic field; and

introducing a second Wheatstone bridge, the second Wheatstone bridge configured to generate at least a second output signal in the presence of the variable magnetic field; the second Wheatstone bridge located a distance from the first Wheatstone bridge; the distance being selected to create a phase shift between the first output signal and the second output signal;

wherein the ~~first set of runners is approximately perpendicular to the second set of runners~~ first and second Wheatstone bridges are oriented with respect to a ring magnet such that the first set of runners is substantially in parallel to a radial line from the center of the ring magnet and the second set of runners is substantially perpendicular to the radial line from the center of the ring magnet.

14. (Original) The method of claim 13, the first Wheatstone bridge and the second Wheatstone bridge being fabricated as an integrated circuit.

15. (Original) The method of claim 14, further comprising the step of introducing a computing means in communication with the first Wheatstone bridge and the second Wheatstone bridge.

16. (Original) The method of claim 15, the computing means being fabricated on the integrated circuit.

17. (Currently Amended) The method of claim 15, ~~further comprising the step of introducing~~ wherein the ring magnet comprises a magnet array in proximity to the first and second Wheatstone bridges.

18. (Original) A product made according to the method of claim 16.

19. (Original) A product made according to the method of claim 17.

20. (Currently Amended) An apparatus to sense the speed and direction of a ~~moving member having a magnetic field~~ ring magnet, the apparatus comprising:

at least a first set of runners and at least a second set of runners adjacent to the moving member, wherein the first set of runners is approximately perpendicular to the second set of runners; the first set of runners and the second set of runners configured as a first Wheatstone bridge, the first Wheatstone bridge configured to generate at least a first output signal as the ~~member~~ ring magnet moves and as a magnetic field associated with the ~~member~~ ring magnet electrically influences at least one of the first and second set of runners; and

the apparatus further comprising a second Wheatstone bridge located a distance from the first Wheatstone bridge, the second Wheatstone bridge configured to generate at least a second output signal as the ~~member~~ ring magnet moves and in the presence of the magnetic field associated with the ~~member~~ ring magnet; and the distance between the first and second Wheatstone bridge selected to create a phase shift between the first and second output signals;

wherein the ~~first set of runners is approximately perpendicular to the second set of runners~~ first Wheatstone bridge is oriented with respect to the ring magnet such that the first set of runners is substantially in parallel to a radial line from the center of the ring magnet and the second set of runners is substantially perpendicular to the radial line from the center of the ring magnet.

21. (Cancelled)

22. (Previously Presented) The apparatus of claim 20, the first set of runners further comprising a first set of resistive elements, the second set of runners further comprising a second set of resistive elements.

23. (Currently Amended) The apparatus of claim 20, further comprising a computing means in communication with the first set of runners and the second set of runners ~~of each bridge~~.

24. (Original) The apparatus of claim 20, the first Wheatstone bridge and the second Wheatstone bridge being fabricated as an integrated circuit.

25 (Currently Amended) The apparatus of claim ~~20~~ 24, further comprising a computing means in communication with the first Wheatstone bridge and the second Wheatstone bridge, the computing means configured to determine the rotational speed and direction of ~~a moving member~~ the ring magnet that is rotating based upon the first bridge signal's relationship to the second bridge signal.

26. (Original) The apparatus of claim 25, the computing means being fabricated on the integrated circuit.

27. (Currently Amended) The apparatus of claim 20, the ~~moving member~~ ring magnet comprising a magnetic array which further comprises at least a first magnetic orientation and at least a second magnetic orientation.

28. (Cancelled)

29. (Currently Amended) The apparatus of claim 24, the second Wheatstone bridge further comprising a third set of runners and a fourth set of runners, the

first set of runners and the second set of runners in the first Wheatstone bridge oriented corresponding to the third set of runners and the fourth set of runners in the second Wheatstone bridge.

30. (Currently Amended) The apparatus of claim 24, the first Wheatstone bridge being further configured in the same orientation as the second Wheatstone bridge.

31. (Currently Amended) The apparatus of claim ~~28~~ 20, wherein the first and second Wheatstone bridges are placed approximately in a plane parallel to and facing the side of the ring magnet.

32. (Currently Amended) The apparatus of claim ~~28~~ 20, wherein the first and second Wheatstone bridges are placed approximately in a plane parallel to and at the end of the ring magnet.

33. (Currently Amended) An apparatus to sense the speed of a ~~moving member having a magnetic field~~ ring magnet, the apparatus comprising:

at least a first set of runners and at least a second set of runners adjacent to the ~~moving member~~ ring magnet, wherein the first set of runners is approximately perpendicular to the second set of runners; the first set of runners and the second set of runners configured as a Wheatstone bridge, the Wheatstone bridge configured to generate at least an output signal as the ~~member~~ ring magnet moves and as a magnetic field associated with the ~~member~~ ring magnet electrically influences at least one of the first and second set of runners;

wherein the ~~first set of runners is approximately perpendicular to the second set of runners~~ Wheatstone bridge is oriented with respect to the ring magnet such that the first set of runners is substantially in parallel to a radial line from the center of the ring magnet and the second set of runners is substantially perpendicular to the radial line from the center of the ring magnet.

34. (Cancelled)

35. (Previously Presented) The apparatus of claim 33, the first set of runners further comprising a first set of resistive elements, the second set of runners further comprising a second set of resistive elements.

36. (Currently Amended) The apparatus of claim 33, further comprising a computing means in communication with the first set of runners and the second set of runners of the Wheatstone bridge, wherein the computing means is configured to determine the rotational speed of ~~a moving member~~ the ring magnet.

37. (Original) The apparatus of claim 33, the Wheatstone bridge being fabricated as an integrated circuit.

38. (Currently Amended) The apparatus of claim 33, the ~~moving member~~ ring magnet comprising a magnetic array ~~ring magnet~~ which further comprises at least a first magnetic orientation and at least a second magnetic orientation.

39. (Currently Amended) The method of claim 13 further comprising the step of determining a direction of movement of ~~a moving member that causes the variable magnetic field~~ the ring magnet based on the shift between the first output signal and the second output signal.

40. (Currently Amended) The apparatus of claim 23, wherein the computing means is configured to determine a direction of movement of the ~~moving member~~ ring magnet based on the phase shift between the first output signal and the second output signal.